

Enhanced Recovery Programme

Orthopaedics-Anterior Cruciate Ligament Repair

June 2019

THE ENHANCED RECOVERY PROGRAMME

The Enhanced Recovery Programme aims to improve the experience and wellbeing of people who require surgery. The Enhanced Recovery programme promotes your health and wellbeing helping you to return to normal as soon as possible.

There is a great deal of research available on enhanced recovery after surgery, which states that the sooner you get out of bed, begin to walk and start eating and drinking, the quicker the recovery.

With this fairly new approach to care, recovery after surgery is more comfortable, easier and happens more quickly.

This approach involves:

- Pre-operative advice and information
- Carbohydrate rich drinks before surgery
- Tailored postoperative pain relief
- Early feeding after surgery
- Early walking after surgery

These elements speed up recovery and reduce the possibility of complications such as chest infections and muscle wastage.

The Enhanced Recovery programme aims to ensure patients are involved in their own care. We ask that you play an active role in your recovery and work in partnership with all of the orthopaedic team to achieve this.

STAFF INVOLVED

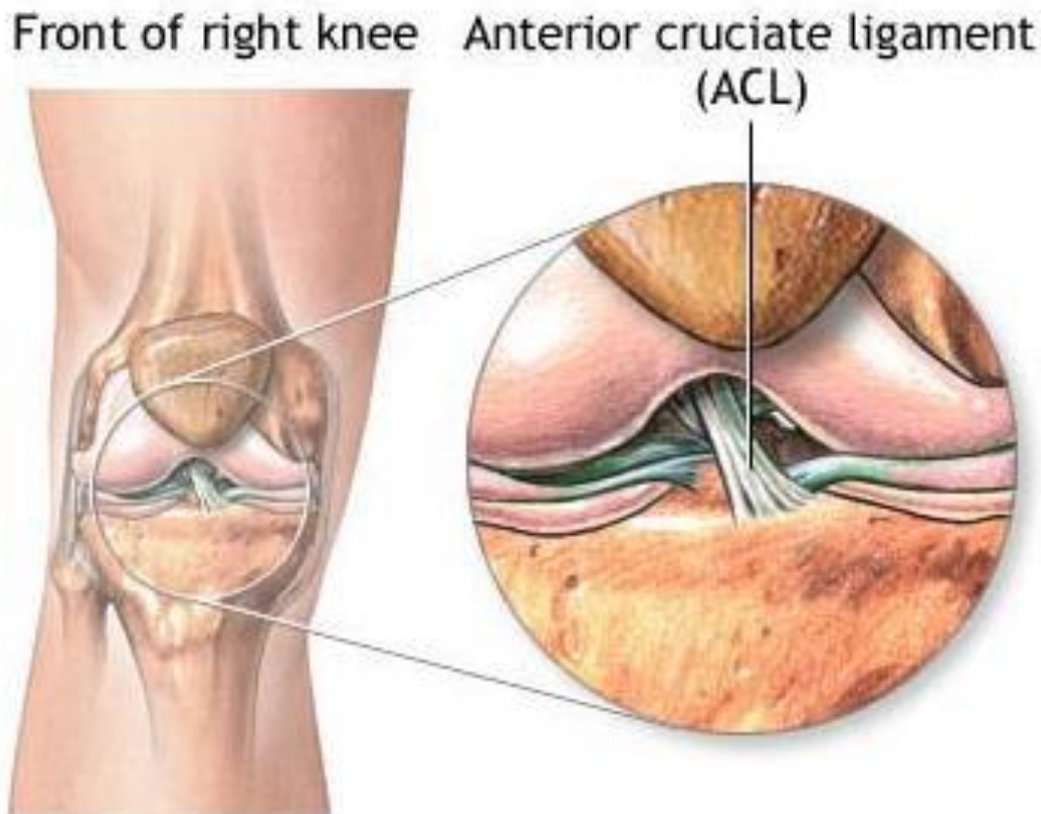
The Enhanced Recovery programme focuses on providing the highest quality care using a multidisciplinary approach, which means you may receive input and care from several different members of staff throughout your stay, for example:

- Your Consultant and his team of Doctors
- Anaesthetist
- Pre-operative clinic nurse
- Theatre/Recovery Nurse
- Physiotherapist
- Occupational Therapist
- Ward Staff (Manager/Sister/Staff Nurses/Auxillaries)
- Discharge Co-ordinator
- Dietician
- Pain Team
- The Enhanced Recovery Team

INTRODUCTION TO ANTERIOR CRUCIATE LIGAMENT REPAIR

The knee is a complex joint that depends on bones, ligaments and muscles for its stability. There are four major ligaments in the knee - the medial and lateral collateral ligaments supporting either side of the joint, and two cruciate ligaments in the centre of the joint controlling forward and backward glide. All four ligaments work together to control rotation.

The anterior cruciate ligament (ACL) is the one most commonly requiring surgical reconstruction after injury.



Most commonly the graft is taken from either the patellar tendon (on the front of the knee) or the hamstrings tendons (at the back of the knee). Both grafts have been shown to produce excellent results however, nothing is yet perfect and you may find confusing information if you try to research the topic. There are other sources of grafts available but they are not commonly used. If you are unsure or wish to discuss the pros and cons in more detail contact your Consultant (via their Secretary).

We hope this booklet will help answer some of your questions. We believe that it is important for you to be as prepared as possible, to give you some idea of what the operation and your hospital stay will involve. Our aim is to help you improve the quality of your life and benefit fully from your ACL reconstruction.

ARE THERE ANY RISKS INVOLVED WITH ACL RECONSTRUCTION?

Although all necessary precautions are taken, occasionally complications may occur.

- There is a risk of respiratory problems from the anaesthetic.
- Bleeding or deep bruising can occur around the operation site.
- A blood clot could form in the legs called Deep Vein Thrombosis (DVT). Rarely one of these clots may travel to the lung and cause a Pulmonary Embolism (PE).
- An infection may develop either immediately after your surgery or sometime later that may require other procedures which could involve a return to theatre.
- Skin changes such as blisters, discolouration or numbness may occur around the scar.
- Anterior knee pain.
- Stretching of the graft causing instability.
- Failure of the graft.
- As with all major operations, during or following surgery, death is a risk. However it must be emphasised that this is **extremely** rare.

WHAT ARE THE ALTERNATIVES?

The decision to have surgery or not is entirely yours, although your doctor will be happy to advise you. If left untreated the torn ACL may lead to anterior laxity and rotary instability of the knee complex, and later meniscal (cartilage) tears (which in turn may lead to earlier onset of degenerative arthritis).

BEFORE YOUR SURGERY

It is important that you are as fit as possible before your operation. You should try to maintain a healthy weight as being overweight increases the risks associated with surgery. It may be advisable to see your GP or dietician for advice.

Any blood pressure problems or long standing health problems should be known to, and being treated by your Doctor.

You should continue with any exercises your physio has advised to remain as mobile as possible, in order to keep your muscles strong. ***The stronger your muscles are before surgery the easier you will find your recovery.***

SMOKING AND ALCOHOL

Smoking prior to surgery delays wound and bone healing and increases your risk of developing chest complications during and after surgery not to mention increasing your risk of long term chest problems. Prior to hospital admission we advise that you stop smoking at least 2 weeks before and for at least 6 weeks after. If you require assistance with stopping smoking prior to surgery please visit your GP for advice.

Tameside Hospital is a non smoking site.

Alcohol intake should also be reduced prior to admission and for around 6-8 weeks after. If your intake is considered excessive please inform clinic staff or visit your GP. Think about how you will cope on return from hospital. You may need to alter the position of some of your furniture before you return home.

PRE-OPERATIVE EXERCISES

These exercises are designed to mobilise the knee joint, stretch tight tissue structures and strengthen muscle groups around the knee, prior to surgery.

NB: If you are already under the care of a Physiotherapist prior to surgery you should follow whatever exercise regime they have given you (rather than this one)

Try to do as many as possible, ideally daily, prior to your admission.

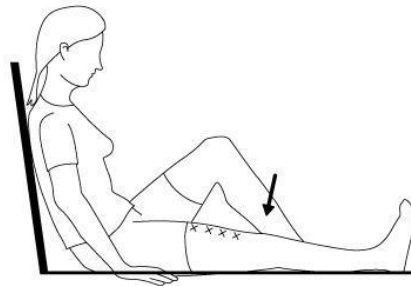
Calf Pumps

Briskly move your feet up and down, and round in circles, from the ankles for 1 minute



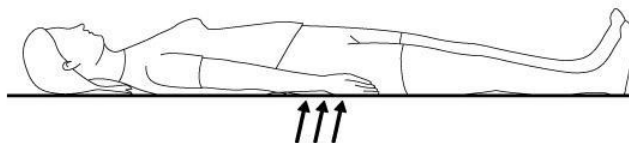
Static Quadriceps

Lie on your back (or sit) with your leg straight, tighten your thigh muscle and push the back of your knee down into the bed then pull your foot up towards you, hold for 5 seconds, repeat x 10



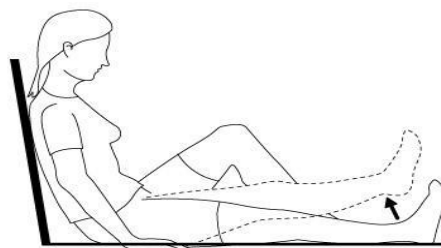
Gluts Squeezes (can be done seated or lay down)

Tense/squeeze your buttocks hold for 5 seconds, relax, repeat x 10



Straight Leg Raises

Lie on your back (or sit), tighten your thigh muscle to fully lock the knee straight and pull your foot up towards you, then lift the whole leg off the bed-keeping the knee straight; lift approx. 5 inches, then slowly lower down, repeat x 10



DIETARY INFORMATION

Research shows that if you are well nourished and hydrated before and after your surgery you may recover better and more quickly.

You should try to eat as normally as possible up until your surgery.

- Eat regular meals containing protein foods such as meat, fish, eggs, cheese, lentils and milk.
- Include carbohydrate foods at each meal such as cereals, bread, rice, pasta and potatoes.

- If you are underweight or experiencing unintentional weight loss

- Avoid using low fat foods / drinks – use full fat milk, margarine / butter, cheese, and yogurts.
- Include extra snacks e.g. yogurts, cheese and crackers, rice pudding etc. an nourishing fluids e.g. full fat milk

It may be advisable to see your GP to investigate causes for weight loss.

After your surgery you should eat and drink as soon as you feel able, and try to continue to eat as normally as possible. This will help you in your recovery.

If you are having difficulty eating, the nurses will monitor your intake, and refer you to the dietician.

WHAT IS PRELOAD?

Pre Load is a carbohydrate powder. It is used to prevent dehydration, lethargy and insulin resistance which can help you recover quicker. It has a neutral taste when diluted in water.

Pre-load is not given to diabetic patients as this will increase your blood sugars level, which may impact on your operation and recovery.

You will have:-

- * **On the night before surgery** you will have **800ml of Preload to sip between 7pm – 11pm**. You can drink water at this time also. (This is 2 sachets of preload dissolved in 800mls of water). We suggest you have a supper then no solids 6 hours prior to admission.
- * **On the morning of your surgery** you will have **400ml of Pre Load** to sip. This should be consumed in full 2 hours before surgery. You should also stop drinking water 2 hours before surgery. (This is 1 sachet of pre load dissolved in 400 mls of water). This should have been consumed prior to your arrival to hospital.

Medications

Please ensure you bring all your current medications, inhalers, creams, eye drops, ointments and any non-prescribed/herbal medications with you on admission to the ward. Where possible please bring your medications in their original packaging.

Ideally herbal medication should be stopped at least two weeks prior to your operation, as these can sometimes cause complications during your surgery.

PLANNED ORTHOPAEDIC UNIT

On the day of your surgery you will be admitted to the Planned Orthopaedic Unit. This ward accommodates patients undergoing orthopaedic procedures. Male and Female patients are nursed in separate areas. Please be assured that it is a very rare occurrence that we have to cancel patients on the day of planned surgery.

The visiting times are 3pm to 4.30 pm and 6.30pm to 8 pm every day.

The ward has a quiet period every day after lunch to allow patients to rest. The ward is closed to visitors in this time.

Please nominate one person to ring the ward with any enquiries as answering multiple phonecalls greatly impacts on time nurses could spend with patients. Please advise your family members that specific details of your condition cannot be discussed over the telephone

Flowers are not permitted on the unit.

DAY OF ADMISSION

Please bring in the following items:

- All medications in their original packaging if possible.
- Day clothes- practical shoes which must have backs. Comfortable, loose clothing is recommended whilst in hospital- shorts, tracksuits or comfortable skirts are ideal.
- Nightclothes, dressing gown and slippers (practical and well fitting, mule type slippers are **not** safe for walking around the ward after your operation)
- Toiletries and towels (please note there are no facilities for washing patient's belongings in the hospital)

We advise that expensive jewellery, personal belongings and large amounts of money are NOT brought into hospital. We suggest that patients keep no more than £10 with them at any one time. Please ensure all nail polish is removed from fingers and toes.

Most patients will be admitted the morning of their surgery. Research has shown that this reduces anxiety. If the healthcare team feel you need to be admitted sooner you will be contacted.

You will be able to eat normally up to 6 hours before your operation and be allowed clear fluids up to 2 hours before surgery, unless otherwise directed. Clear fluids means water/black tea or coffee or cordial **no milky drinks are allowed.**

DAY OF SURGERY

On the day of surgery a shower should be taken (this should be at home prior to arrival to the hospital). This ensures your skin is as clean as possible prior to your surgery and can help to reduce the risk of wound infections.

You will also be required to change into a hospital gown.

The staff on the ward and escort staff will ask you some questions on what is called a “pre-operative check list”.

You will be asked to confirm your signature on your consent form and whether you understand what the surgeon is planning to do and that you are aware of potential risks/complications. (Consent for surgery will either be gained in clinic or on the ward/unit prior to surgery).

An Anaesthetist may see you prior to theatre to discuss the options available for pain relief.

You will be escorted to theatre for your operation either via a trolley or walking, depending on your preference.

When you wake up from surgery you will be in the recovery room. You may have oxygen in place through a facemask and an intravenous drip (which gives you fluid directly into a vein). Once the Recovery Nurse feels you are stable enough to return to the elective unit, your transfer back to the unit will be arranged.

Sometimes after surgery it is necessary for patients to go to a High Dependency Unit (HDU) for closer monitoring. Often this decision is planned and the Anaesthetist will have discussed this prior to surgery, however, there are occasions when an unplanned transfer to HDU is required.

On return to the Elective Unit your nurse will closely monitor you vital signs, including:

- Blood Pressure
- Pulse
- Respirations and oxygen levels
- Temperature
- Urine output
- Conscious level
- Nausea and Pain scores

Your nurse will also need to regularly check your wound. You will be assisted in adjusting your position on a regular basis. Please be aware that these observations are important and staff will have to wake you in the night to continue to monitor you safely.

After your surgery it is essential you perform deep breathing and circulatory exercises as explained to you in pre-op clinic.

PAIN CONTROL

Your operation will normally be performed under general anaesthesia. This gives you a state of controlled sleep during your operation, in other words you are asleep and feel nothing. Occasionally general anaesthesia is combined with regional anaesthesia which involves drugs being injected near to the bundles of nerves which carry signals from that particular area of the body up towards the brain.

Other Forms Of Pain Relief Include:

Oral Tablets and medicines: These are used for all types of pain and take at least 20-30 minutes to have some effect. However they may not be as effective as spinal anaesthetic/analgesia in treating severe pain and are usually given with a spinal to promote comfort.

Injections: can be given directly into your vein for immediate effect or into your leg or buttock muscle. This method of administration usually takes 20 minutes before the pain relief starts working. Injections administered directly into a vein are very effective as it enables the pain relieving medication to be given according to your individual level of pain.

Suppositories: are inserted into your back passage, where they dissolve and eventually enter your bloodstream, they will not make you open your bowels. Suppositories may be given if you are 'nil by mouth' or unable to tolerate fluids.

Patient Controlled Analgesia: This system relies on a special pump, which contains opiates and sometimes anti-sickness medication. The pump is connected to a hand held button, which when pressed by yourself gives a small amount of pain relieving medicine straight into a vein usually in your arm or hand.

Epidural Analgesia: This is a method by which a small tube is placed close to the spinal cord. The tube is then connected to a machine, which gives drugs, to numb the nerves at and around the site of the operation.

Peripheral Nerve Block: Local anaesthetic is injected around tissues and nerves in and around the site of your operation, to numb them. These drugs continue to work for a number of hours post-surgery.

AFTER SURGERY

It is important that after surgery you follow the daily routine that is outlined for you in the Enhanced Recovery Programme and your Physio goal Diary.

For the first 24 hours you will have *Flowtron boots* (intermittent compression boots) in place which are designed to reduce the incidence of clots in your legs also known as DVT's.

Blood tests and X-rays may be ordered in the days after your surgery this will be done by your team of doctors.

Diet and Fluids

You can eat and drink as normal and to your tolerance, we may monitor your food

intake to ensure you are eating and drinking enough to help you in your recovery. See the Dietary advice section within this booklet .

Sickness

Sometimes people experience feeling or being sick after an operation. If you do develop such symptoms please inform staff and they can give you some medication (sometimes in injection form) to help relieve this.

Pain

You will be provided with regular medication to control the pain, which will be prescribed according to your requirements. It is important that you inform staff if you are experiencing pain and it is not being relieved by the medication provided, as adjustments can be made. Severe pain on very rare occasions could indicate a problem with the surgery and therefore should be reported to staff.

Mobility

You will be expected to sit out of bed for around 2 hours on the day of surgery. You will be assisted to do this by the physiotherapy team and the staff on the Elective Unit.

Staff will remind you regularly of the benefits the Enhanced Recovery Programme offers and the breathing and circulatory exercises you should be performing. You will be seen by the Physiotherapy team on a daily basis, the staff on the unit will also be encouraging you to increase your mobility a little further each day..

Wounds

It is not unusual for your wound to be slightly red and uncomfortable for the first 1 to 2 weeks. However, please let us know if your wound becomes:

- Inflamed (red), swollen or painful
- Begins to discharge fluid
- Or separates in any place

POST-OPERATIVE PHYSIOTHERAPY

If your operation is in the morning, the Physiotherapy team will visit you in the afternoon after your surgery (usually 4 hours after your operation has finished). If you are able, they will assist you to get out of bed and sit in a chair. You may be able to take more steps or have a short walk at this time. They will also prompt you to complete your exercises. It is important that you continue to practice walking and exercises regularly (as directed by your Physiotherapist): either with the Nursing staff or independently.

The Physiotherapist will provide you with education on walking with crutches (NB: you may need to use a walking frame initially until you regain enough strength to use crutches). You should start the exercises in this booklet as soon as possible once you have woken after your surgery. You will also be assessed for safety in managing steps and stairs before you go home, as appropriate.

MOBILISATION

Getting out of bed:

Your Physiotherapist will assist you to stand from the bed:

- Use your thigh muscles (like doing the straight leg raise exercise) to support your operated leg (your Physiotherapist will assist you initially) as you use your arms to push yourself towards the edge of the bed.
- Slowly let your straight leg lower to the ground.

Sit to stand:

- Slide your operated leg slightly forward
- Using your arms beside you (on the bed or chair arms), push up into standing before reaching for your walking aid.

Walking:

To begin with, you may use a walking frame, and then progress to crutches as appropriate.

The correct sequence when walking is:

1. Move the walking aid forwards/in front first
2. Step the operated leg forward- just up to the crutches
3. Step the un-operated leg forward, so it is level with the other

When turning you must always be careful not to twist your knee: always step round towards your good/un-operated leg, picking up your feet.

Sitting down:

- Always ensure you have turned and backed up to the chair so that it is aligned behind you (i.e. never twist into the chair)
- Let go of your walking aid
- Feel for the chair arms
- Slide the foot of your operated leg forwards as you slowly lower yourself down into the chair

Getting into bed:

- Sit on the edge of the bed
- Using your hands beside you, push yourself back to sit far enough back on the bed so that the operated leg is supported
- Turn to position yourself on the bed

EXERCISES:

Start the following as soon as you feel able after coming round from your surgery: (see previous explanations)

- Calf pumps
- Gluts/buttock squeezes
- Breathing exercises
- Take 4-6 deep breaths in and out then finish with a cough

This will help to clear away any build up of mucus

Repeat these circulation and breathing exercises hourly, whilst in hospital

These exercises are important and will help to increase the circulation in your legs, helping to prevent blood clots following your surgery.

The following exercises will improve the muscle strength in your leg. They **must** be performed 3-4 x daily. Some patients can experience some muscle pain following surgery: please advise your nurse/physio if this occurs.

Static quadriceps

As previously in the booklet, x 10 repetitions

Straight Leg Raises

As previously in the booklet, x 10 repetitions

Extension Stretch

It is very important that you are able to achieve full extension/straightening of your knee as soon as possible.

Place a rolled towel just above your heel so that the back of your knee is not touching the bed **or** sit with your operated leg out in front of you with the heel supported on another chair.

Let your knee relax as straight as possible (gravity will help!) and rest like this for approx. 5 minutes

Supported (closed-chain) Flexion

Lie or sit on the bed with your splint unfastened.

Gently slide your heel up the bed towards your bottom- keeping your foot in contact with the bed at all times. Stop when you reach an angle of 60° bend at the knee gently slide the leg flat again

TACKLING STAIRS AND STEPS

Before you go home you will be taught to use stairs safely.

Going up:

1. Pass one crutch in front of your body into your other hand (so crutches are in a cross + shape)
2. Hold onto the banister/handrail with your free hand
3. Step up with your good/un-operated leg
4. Bring up your bad/operated leg
5. Bring your crutch up last

Going down:

1. Place your crutch down onto the step below
2. Slide your hand down the banister
3. Lower your bad/operated leg down first
4. Bring your good/un-operated leg onto the same step

GENERAL ADVICE

Progression is largely dependent on you. You must exercise regularly to regain movement, strength and independence. Periods of rest in between are equally important. Do not sit still for too long: get up and walk and exercise regularly. Little and often is the key!

Initially, you are advised to sleep on your back. After the clips have been removed from your wound, you may try sleeping on your side, if it is comfortable to do so.

POINTS TO REMEMBER:

- Do not discard your walking aids until advised to do so by your out-patient Physiotherapist/Consultant (then please return them to the Physiotherapy Department, Hartshead North Building) or arrange to return them to Rosscare on 0161 344 0482
- Keep your CPS on until advised you can remove it by your Physiotherapist/Consultant

- Avoid long periods of standing.
- Do not drive until advised to do so by your Consultant

Once you are home you must continue with all of your exercises and use ice packs to help reduce the swelling.

Your out-patient Physiotherapist will guide you through your rehabilitation and return to full activity/sports/etc.

You should receive a physiotherapy outpatient appointment 2- 3 weeks after you have been discharged from hospital , if you do not , please contact the Physiotherapy department

DISCHARGE HOME

It is our aim for you to be in you own home recovering as soon as possible. It is important that adequate support from your family and friends is organized prior to your surgery, as adequate rest is also an important part of your recovery. We aim to discharge you from hospital in line with your expected date of discharge, however we do take into account individual variances.

PREPARING TO LEAVE HOSPITAL

You must arrange for a family member or friend to collect you from the elective unit on your day of discharge. You will need to bring into hospital appropriate outdoor clothes to go home in.

WHEN YOU LEAVE HOSPITAL

A discharge letter will be sent to your GP detailing the events of your hospital stay.

A 7 day supply of your medications/pain relief will be provided from the hospital pharmacy it is important that you contact your GP before your supply runs out.

A referral to the District Nurses may be made, you will be given a copy of the referral form. This referral may be for wound check/dressing change and clip removal, if required.

When you first return home you are likely to feel tired for a while. We recommend that you build your strength slowly with gentle exercise and a good dietary intake.

Before you leave the unit, you will be given a phone number for the clinic and you will receive an appointment in the post for approximately 2 weeks following surgery. Only contact the clinic if you have not received an appointment through the post after 3 weeks.

Driving

You should always speak with your insurance company before coming into hospital as your insurance policy may be affected. We advise that you should not start driving again until your strength and speed of movement are up to coping with an emergency stop. This is also at the discretion of your consultant.

Travel

Please check with your consultant/GP before flying especially long flights. Long car journeys are also best avoided for at least 12 weeks following your operation. If this is unavoidable, we recommend you take regular stops.

Work

If you work we advise that you discuss with your boss the need for time off work after your operation and support on your return to work before coming into hospital. If available, talk with your Occupational Health Department. The length of time off will depend on what job you do. Discuss returning to work with your out-patient Physiotherapist.

Complications are a very rare occurrence however it is important to know what to do if one occurs. Below are several useful contact numbers where you can seek advice.

Useful Contact Numbers:

Enhanced Recovery Team:	0161 922 6759
Planned Orthopaedic Unit:	0161922 6235/6208 (24hrs)
Orthopaedic Physio:	0161 922 6313 (Mon-Fri 8.30-4)
Go to Doc (GP service):	0161 785 0805 (out of hours)
NHS Direct:	0845 46 47 (24hr helpline)

You can also contact your own GP or District Nurses for advice.

Useful Websites/information

Department of Health (www.dh.gov.uk)
NHS Choices (www.nhs.uk/conditions)
NHS institute for innovation
and improvement (www.institute.nhs.uk)
NHS Improvement (www.improvement.nhs.uk)

Source Of Good Practice

In compiling this information leaflet a number of recognised professional bodies including the The Department of Health, NHS improvement , NHS Choices, Royal College of Anaesthetists have been used.

If you have any questions you want to ask, you can use this space below to remind you.

